

5 **METHOD AND APPARATUS FOR DEPOSITING REFRactory METAL
LAYERs EMPLOYING SEQUENTIAL DEPOSITION TECHNIQUES TO FORM A
NUCLEATION LAYER**

ABSTRACT OF THE DISCLOSURE

A method and system to form a refractory metal layer on a substrate features
10 nucleating a substrate using sequential deposition techniques in which the substrate is serially exposed to first and second reactive gases followed by forming a layer, employing vapor deposition, to subject the nucleation layer to a bulk deposition of a compound contained in one of the first and second reactive gases.